

ATTACHMENT APPARATUSES AND ASSOCIATED METHODS OF USE AND MANUFACTURE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is continuation application of U.S. patent application Ser. No. 14/771,642, filed Aug. 31, 2015, which is a 35 U.S.C. § 371 application of PCT/US2014/028180, filed Mar. 14, 2014 and titled “Attachment Apparatuses and Associated Methods of Use and Manufacture,” which claims priority to U.S. Provisional Patent Application No. 61/801,915, filed Mar. 15, 2013 and titled “Attachment Apparatuses and Associated Methods of Use and Manufacture,” the disclosures of which are hereby incorporated by reference herein in their entireties.

FIELD OF THE DESCRIBED EMBODIMENTS

[0002] The described embodiments relate generally to attachment apparatuses, and more particularly, to attachment apparatuses including straps or bands with at least one point of attachment.

BACKGROUND

[0003] Generally, straps or bands may be attached to a variety of items for use in carrying the items (e.g., hand strap or luggage strap), strapping them to another item or a person's body (e.g., arm band), or a plurality of other uses. However, conventional straps may require a mechanical connection to fixedly attach the strap to an item, and may not offer easy personal adjustments to length and other attributes. Furthermore, the mechanical connections may be difficult to use making it difficult to remove or replace the strap

SUMMARY OF THE DESCRIBED EMBODIMENTS

[0004] This paper describes various embodiments that relate to attachment apparatuses.

[0005] According to an embodiment of the disclosure, a system for carrying or using a device may include the device and at least one attachment apparatus. The device may include at least one attachment element. The at least one attachment apparatus may include a length of material and at least one attachment point arranged on an end of the length of material. The at least one attachment point may include at least one magnetic feature configured to attach and detach the device and the length of material. The material can include but is not limited to cloth, metallic (magnetic and non-magnetic), fibrous material, and so forth.

[0006] According to an additional embodiment of the disclosure, a method of carrying or using a device may include at least one attachment element. The method may further include engaging at least one attachment apparatus with the at least one attachment element. The at least one attachment apparatus may include a length of material and at least one attachment point arranged on an attachment point of the length of material, and a magnetic element corresponding to the attachment point and configured to couple to the at least one attachment element. The at least one attachment point may be formed of a material configured to cosmetically match a cosmetic appearance of the device.

[0007] An attachment system may include a first strap unit having at least one strap with a first strap characteristic and a first strap attachment coupling, the first strap characteristic possibly including a magnetic field having a polarity and a second strap unit having at least one strap with a second strap characteristic and a second attachment coupling that is configured to securely engage to the first attachment coupling of the first strap unit and releasably engage from the first attachment coupling of the first strap unit. The second attachment coupling may cooperate with the first attachment coupling of the first strap unit, the first strap unit possibly including a first magnetically attractable element. A cooperating strap assembly may be formed by the first strap unit and the second strap unit magnetically attaching to each other.

[0008] A strapping assembly may include a first flexible member having a first attachment element and a second flexible member having a second attachment element, the second attachment element possibly being configured to couple to the first attachment element so as to secure the first and second flexible members together, the first and second attachment elements possibly including at least a magnetic element that provides at least a portion of the coupling force of the first attachment element relative to the second attachment elements.

[0009] A strapping assembly may include a carrier module including at least one functional element and a first attachment element; a flexible member that includes a length of material and having a second attachment element disposed proximate one end of the length of material, the second attachment element possibly being configured to couple to the first attachment element so as to secure the flexible member to the base unit, the first and second attachment elements possibly including at least a magnetic element that provides at least a portion of the coupling force of the first attachment element relative to the second attachment elements.

[0010] A strapping assembly may include a carrier module including at least one functional element and a pair of first module attachment elements; a first flexible member having a second module attachment element that is configured to couple to one of the first module attachment elements, the first flexible member possibly including a first strap attachment element; and a second flexible member possibly having a second module attachment element that is configured to couple to the other one of the first module attachment elements, the second flexible member possibly including a second strap attachment element, the second strap attachment element possibly being configured to couple to the first strap attachment element so as to secure the first and second flexible members together, wherein the first and second strap attachment elements may include at least a magnetic element that provides at least a portion of the coupling force of the first strap attachment element relative to the second strap attachment elements, wherein the first and second module attachment elements may include at least a magnetic element that provides at least a portion of the coupling force of the first module attachment element relative to the second module attachment elements.

[0011] According to an embodiment of the disclosure, a modular assembly for electronic devices is described. A modular assembly for electronic devices may include a base unit having at least a first functional system and a first enclosure with a first characteristic, the first base unit